

seqlist.txt
SEQUENCE LISTING

10/526063
BT01 Rec'd PCT/PTC 28 FEB 2005

<110> ASHMAN, Claire
ELLIS, Jonathan Henry

<120> IL-14 VACCINE FOR THE TREATMENT OF
ASTHMA AND ATOPIC DISORDERS

<130> PG4939

<140> Not Yet Assigned

<141> 2005-02-28

<150> PCT/GB03/003729

<151> 2003-08-28

<150> GB 0304672.9

<151> 2003-02-28

<150> GB 0220211.7

<151> 2002-08-30

<160> 70

<170> FastSEQ for windows Version 4.0

<210> 1

<211> 112

<212> PRT

<213> Homo sapiens IL-13

<400> 1

Gly	Pro	Val	Pro	Ser	Thr	Ala	Leu	Arg	Glu	Leu	Ile	Glu	Glu	Leu
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Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser
		20						25				30		Met
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu
		35					40					45		Glu
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln
	50					55					60			Arg
Met	Leu	Ser	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe
65					70				75					80
Ser	Leu	His	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val
			85						90				95	Lys
Asp	Leu	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe
			100					105					110	Asn

<210> 2

<211> 111

<212> PRT

<213> Murine IL-13

<400> 2

Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu	Thr	Leu	Lys	Glu
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Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln	Thr	Pro	Leu	Cys
		20						25				30		Asn
Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala	Gly	Gly	Phe	Cys
		35					40				45			Val
Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys	Asn	Ala	Ile	Tyr
	50					55					60			Arg
Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg	Lys	Ala	Pro	Thr
65					70				75					80
Val	Ser	Ser	Leu	Pro	Asp	Thr	Lys	Ile	Glu	Val	Ala	His	Phe	Ile
			85						90					95

seqlist.txt

Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
 100 105 110

<210> 3
 <211> 111
 <212> PRT
 <213> Porcine IL-13

<400> 3
 Gly Pro Val Pro Pro His Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu
 1 5 10 15
 Leu Val Asn Ile Thr Gln Asn Gln Lys Thr Pro Leu Cys Asn Gly Ser
 20 25 30
 Met Val Trp Ser Val Asn Leu Thr Thr Ser Met Gln Tyr Cys Ala Ala
 35 40 45
 Leu Glu Ser Leu Ile Asn Ile Ser Asp Cys Ser Ala Ile Gln Lys Thr
 50 55 60
 Gln Arg Met Leu Ser Ala Leu Cys Ser His Lys Pro Pro Ser Glu Gln
 65 70 75 80
 Val Pro Gly Lys His Ile Arg Asp Thr Lys Ile Glu Val Ala Gln Phe
 85 90 95
 Val Lys Asp Leu Leu Lys His Leu Arg Met Ile Phe Arg His Gly
 100 105 110

<210> 4
 <211> 112
 <212> PRT
 <213> Bovine IL-13

<400> 4
 Ser Pro Val Pro Ser Ala Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Val Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Leu Asn Leu Thr Ser Met Tyr Cys Ala Ala Leu Asp
 35 40 45
 Ser Leu Ile Ser Ile Ser Asn Cys Ser Val Ile Gln Arg Thr Lys Lys
 50 55 60
 Met Leu Asn Ala Leu Cys Pro His Lys Pro Ser Ala Lys Gln Val Ser
 65 70 75 80
 Ser Glu Tyr Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Leu Lys
 85 90 95
 Asp Leu Leu Arg His Ser Arg Ile Val Phe Arg Asn Glu Arg Phe Asn
 100 105 110

<210> 5
 <211> 111
 <212> PRT
 <213> Canine IL-13

<400> 5
 Ser Pro Val Thr Pro Ser Pro Thr Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Ala Ser Leu Cys Asn Gly Ser Met Val
 20 25 30
 Trp Ser Val Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser
 35 40 45
 Leu Ile Asn Val Ser Asp Cys Ser Ala Ile Gln Arg Thr Gln Arg Met
 50 55 60
 Leu Lys Ala Leu Cys Ser Gln Lys Pro Ala Ala Gly Gln Ile Ser Ser
 65 70 75 80
 Glu Arg Ser Arg Asp Thr Lys Ile Glu Val Ile Gln Leu Val Lys Asn
 85 90 95
 Leu Leu Thr Tyr Val Arg Gly Val Tyr Arg His Gly Asn Phe Arg
 100 105 110

seqlist.txt

<210> 6
 <211> 111
 <212> PRT
 <213> Rat IL-13

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 20 25 30
 Asn Ser Ser Met Val Trp Ser Val Asp Leu Thr Ala Gly Gly Phe Cys
 35 40 45
 Ala Ala Leu Glu Ser Leu Thr Asn Ile Ser Ser Cys Asn Ala Ile His
 50 55 60
 Arg Thr Gln Arg Ile Leu Asn Gly Leu Cys Asn Gln Lys Ala Ser Asp
 65 70 75 80
 Val Ala Ser Ser Pro Pro Asp Thr Lys Ile Glu Val Ala Gln Phe Ile
 85 90 95
 Ser Lys Leu Leu Asn Tyr Ser Lys Gln Leu Phe Arg Tyr Gly His
 100 105 110

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 <212> PRT
 <213> Cynomolgus

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 Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Val Tyr Cys Ala Ala Leu Glu
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50 55 60
 Met Leu Asn Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85 90 95
 Asp Leu Leu His Leu Lys Lys Leu Phe Arg Glu Gly Gln Phe Asn
 100 105 110

<210> 8
 <211> 112
 <212> PRT
 <213> Rhesus IL-13

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 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Val Tyr Cys Ala Ala Leu Glu
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50 55 60
 Met Leu Asn Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85 90 95
 Asp Leu Leu Val His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn
 100 105 110

seqlist.txt

<210> 9
 <211> 112
 <212> PRT
 <213> Marmoset IL-13

<400> 9
 Gly Pro Val Pro Pro Tyr Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Met Thr Ala Gly Val Tyr Cys Ala Ala Leu Glu
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50 55 60
 Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu Leu Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85 90 95
 Asp Leu Leu Arg His Leu Arg Lys Leu Phe His Gln Gly Thr Phe Asn
 100 105 110

<210> 10
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo Sapien IL-13

<400> 10
 Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
 50 55 60
 Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80
 Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
 85 90 95
 Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Thr Phe Asn
 100 105 110

<210> 11
 <211> 121
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo sapien IL-13

<400> 11
 Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
 35 40 45
 Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50 55 60
 Met Leu Gly Gly Phe Cys Pro His Lys Phe Asn Asn Phe Thr Val Ser
 65 70 75 80
 Phe Trp Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Asp Thr
 85 90 95

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Lys Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys
 100 105 110
 Lys Leu Phe Arg Glu Gly Arg Phe Asn
 115 120

<210> 12
 <211> 133
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo sapien IL-13

<400> 12
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 Ala Ser His Leu Glu Gly Pro Val Pro Ser Thr Ala Leu Arg Glu
 20 25 30
 Leu Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
 35 40 45
 Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
 50 55 60
 Cys Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
 65 70 75 80
 Glu Lys Thr Gln Arg Met Leu Gly Gly Phe Cys Pro His Lys Val Ser
 85 90 95
 Ala Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val
 100 105 110
 Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg
 115 120 125
 Glu Gly Arg Phe Asn
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<210> 13
 <211> 123
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Murine IL-13

<400> 13
 Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu
 1 5 10 15
 Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
 20 25 30
 Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val
 35 40 45
 Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg
 50 55 60
 Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg Lys Phe Asn Asn Phe
 65 70 75 80
 Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser Ala Ser His Leu
 85 90 95
 Glu Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr Lys Leu Leu Ser
 100 105 110
 Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
 115 120

<210> 14
 <211> 132
 <212> PRT
 <213> Artificial Sequence

<220>

seqlist.txt

<223> Chimaeric Murine IL-13

<400> 14

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1      5      10      15
Ala Ser His Leu Glu Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu
20      25      30
Thr Leu Lys Glu Leu Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln
35      40      45
Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala
50      55      60
Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys
65      70      75      80
Asn Ala Ile Tyr Arg Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg
85      90      95
Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val
100      105      110
Ala His Phe Ile Thr Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg
115      120      125
His Gly Pro Phe
130

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<210> 15

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Murine IL-13

<400> 15

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1      5      10      15
Ala Ser His Leu Glu Gly Pro Val Pro Arg Ser Val Ser Leu Pro Val
20      25      30
Thr Leu Lys Glu Leu Ile Glu Glu Leu Thr Asn Ile Thr Gln Asp Gln
35      40      45
Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala
50      55      60
Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys
65      70      75      80
Asn Ala Ile Phe Arg Thr Gln Arg Ile Leu His Ala Leu Cys Asn Arg
85      90      95
Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val
100      105      110
Ala His Phe Ile Thr Lys Leu Leu Thr Tyr Thr Lys Asn Leu Phe Arg
115      120      125
Arg Gly Pro Phe
130

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<210> 16

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo sapien IL-13

<400> 16

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Tyr Val His Ser Asp Gly Ser Tyr Pro Lys Asp Lys Phe Glu Lys Ile
1      5      10      15
Asn Gly Thr Trp Tyr Tyr Phe Asp Ser Ser Gly Tyr Met Leu Ala Asp
20      25      30
Arg Trp Arg Lys His Thr Asp Gly Asn Trp Tyr Trp Phe Asp Asn Ser
35      40      45
Gly Glu Met Ala Thr Gly Trp Lys Lys Ile Ala Asp Lys Trp Tyr Tyr

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      50      55      60
Phe Asn Glu Glu Gly Ala Met Lys Thr Gly Trp Val Lys Tyr Lys Asp
65      70      75      80
Thr Trp Tyr Tyr Leu Asp Ala Lys Glu Gly Ala Met Gln Tyr Ile Lys
      85      90
Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Gly Val Met Val Ser Asn
      100      105      110
Ala Phe Ile Gln Ser Ala Asp Gly Thr Gly Trp Tyr Tyr Leu Lys Pro
      115      120      125
Asp Gly Thr Leu Ala Asp Arg Pro Glu Gly Pro Val Pro Pro Ser Ser
      130      135      140
Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln
145      150      155      160
Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr
      165      170      175
Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly
      180      185      190
Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro
      195      200      205
His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr
      210      215      220
Lys Ile Glu Val Ala Gln Phe Val Thr Asp Leu Val His Leu Lys
225      230      235      240
Arg Leu Phe Arg Gln Gly Thr Phe Asn
      245

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<210> 17
 <211> 220
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo sapien IL-13

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<400> 17
Ser Ser His Ser Ser Asn Met Ala Asn Thr Gln Met Lys Ser Asp Lys
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Ile Ile Ile Ala His Arg Gly Ala Ser Gly Tyr Leu Pro Glu His Thr
      20      25      30
Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp Tyr Leu Glu
      35      40      45
Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val Ile His Asp
      50      55      60
His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe Pro His Arg
65      70      75      80
His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr Leu Lys Glu
      85      90      95
Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Gly Pro Val Pro
      100      105      110
Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr
      115      120      125
Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile
      130      135      140
Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn
145      150      155      160
Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala
      165      170      175
Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu Arg Val
      180      185      190
Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr Asp Leu Leu Val
      195      200      205
His Leu Lys Arg Leu Phe Arg Gln Gly Thr Phe Asn
210      215      220

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<210> 18
 <211> 133

seqlist.txt

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo sapien IL-13

<400> 18

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1      5      10      15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu
      20      25      30
Leu Ile Glu Leu Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
      35      40      45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
      50      55      60
Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
      65      70      75      80
Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser
      85      90      95
Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val
      100      105      110
Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg
      115      120      125
Gln Gly Thr Phe Asn
      130

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<210> 19

<211> 133

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo sapien IL-13

<400> 19

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Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1      5      10      15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Ile
      20      25      30
Leu Ile Glu Leu Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
      35      40      45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
      50      55      60
Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
      65      70      75      80
Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser
      85      90      95
Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val
      100      105      110
Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg
      115      120      125
Gln Gly Thr Phe Asn
      130

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<210> 20

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Chimaeric Homo sapien IL-13

<400> 20

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Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
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Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met

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                                seqlist.txt
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
      20      25      30
      35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
      50      55      60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65      70      75      80
Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
      85      90      95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Arg Phe Asn
      100      105      110

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<210> 21
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo sapien IL-13

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<400> 21
Gly Pro Val Pro Pro Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
1      5      10      15
Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
      20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
      35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
      50      55      60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65      70      75      80
Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
      85      90      95
Asp Leu Leu Val His Leu Lys Lys Leu Phe Arg Gln Gly Thr Phe Asn
      100      105      110

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<210> 22
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo sapien IL-13

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<400> 22
Gly Pro Val Pro Pro Ser Ser Ala Leu Arg Glu Leu Ile Glu Glu Leu
1      5      10      15
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
      20      25      30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
      35      40      45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Asp Lys Thr Gln Arg
      50      55      60
Met Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65      70      75      80
Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
      85      90      95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Asp Gly Arg Phe Asn
      100      105      110

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<210> 23
 <211> 1260
 <212> DNA
 <213> Artificial Sequence

seqlist.txt

<220>

<223> Plasmid pCDNmIL13CDFC

<400> 23

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ttctgtgtct ctccctctga cccttaagga gcttattgag gagctgagca acatcacaca 180
agaccagact cccctgtgca acggcagcat ggtatggagt gtggacctgg ccgctggcgg 240
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gttgctgtgt cctaaagtat ctgctagtca tttagaagat accaaaatcg aagtagccca 420
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gatgcatgag gctctgcaca accactacac gcagaagagc ctctccctgt ctccgggtaa 1200
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<210> 24

<211> 1260

<212> DNA

<213> Artificial Sequence

<220>

<223> Plasmid pCDNmIL13p30FC

<400> 24

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aaccgtcaga tgcctggag acgccatcga attcgggtacc gccaccatgg cgctctgggt 60
gactgcagtc ctggctcttg cttgccttgg tgggtctcgcc gccccattta ataattttac 120
cgtttagcttt tgggtgctgt ttcctaaagt atctgctagt catttagaag ggccggtgcc 180
acgttctgtg tctctccctc tgacccttaa ggagcttatt gaggagctga gcaacatcac 240
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cgggttctgt gtagccctgg attccctgac caacatctcc aattgcaatg ccatctaccg 360
taccagcgt attttgcatg gcctctgtaa ccgcaaggcc cccactacgg tctccagcct 420
ccccgatacc aaaatcgaaag tagcccactt tattacaaaa ctgctcagct acacaaagca 480
actgttttcg cacggccccct tcctggaggt cctgtttcca ggaccaggat ccgagcccaa 540
atcggccgac aaaactcaca catgcccacc gtgcccagca cctgaactcc tggggggacc 600
gtcagtcttc ctcttcccc caaaacccaa ggacaccctc atgatctccc ggacccttga 660
ggtcacatgc gtggtggtgg acgtgagcca cgaagaccct gaggtcaagt tcaactggta 720
cgtggacggc gtggaggtgc ataatgccaa gacaaagccg cgggaggagc agtacaacag 780
cacgtaccgt gtggtcagcg tcctaccgt cctgcaccag gactggctga atggcaagga 840
gtacaagtgc aaggtctcca acaaagccct ccagcccc atcgagaaaa ccatctccaa 900
agccaaaggg cagccccgag aaccacaggt gtacaccctg ccccatccc gggaggagat 960
gaccaagaac caggtcagcc tgacctgcct ggtcaaaggc ttctatccca gcgacatcgc 1020
cgtggagtgg gagagcaatg ggcagccgga gaacaactac aagaccacgc ctcccgtgct 1080
ggactccgac ggctccttct tcctctatag caagctcacc gtggacaaga gcaggtggca 1140
gcaggggaac gtcttctcat gctccgtgat gcatgaggct ctgcacaacc actacacgca 1200
gaagagcctc tccctgtctc cgggtaaatg agtgtagatc cgtaaacggt taccaactac 1260

```

<210> 25

<211> 72

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 25

seqlist.txt

aacctgtttc gccgcggccc cttcctggag gtcctgttcg gtggaccagg atccgagccc 60
aaatcgccg ac 72

<210> 26
<211> 1260
<212> DNA
<213> Artificial Sequence

<220>
<223> Plasmid pCDNcIL13newFC

<400> 26
aaccgtcaga tcgcctggag acgccatcga attcgggtacc gccaccatgg cgctctgggt 60
gactgcagtc ctggctcttg ctggccttgg tggctctgcc gcccattta ataattttac 120
cgtttagcttt tgggtgcgtg ttcctaaagt atctgctagt catttagaag ggccggtgcc 180
acgttctgtg tctctccctg tgacccttaa ggagcttatt gaggagctga ccaacatcac 240
acaagaccag actccccctgt gcaacggcag catgggtatgg agtgtggacc tggccgctgg 300
cgggttctgt gtagccctgg attccctgac caacatctcc aattgcaatg ccattcttcg 360
taccagcgt attttgcatg ccctctgtaa ccgcaaggcc cccactacgg tctccagcct 420
ccccgatacc aaaatcgaag tagcccactt tattacaaaa ctgctcacct acacaaagaa 480
cctgtttcgc cgcggccccct tcctggagggt cctgttccag ggaccaggat ccgagcccaa 540
atcggccgac aaaactcaca catgcccacc gtgcccagca cctgaactcc tggggggacc 600
gtcagtcttc ctcttcccc caaaacccaa ggacaccctc atgatctccc ggaccctga 660
ggtcacatgc gtggtggtgg acgtgagcca cgaagaccct gagggtcaagt tcaactggta 720
cgtggacggc gtggagggtgc ataatgccaa gacaaagccg cgggaggagc agtacaacag 780
cacgtaccgt gtggtcagcg tcctcaccgt cctgcaccag gactggctga atggcaagga 840
gtacaagtgc aagggtctcca acaaagccct cccagcccc atcgagaaaa ccatctccaa 900
agccaaaggc cagccccgag aaccacaggt gtacaccctg ccccatccc gggaggagat 960
gaccaagaac caggtcagcc tgacctgcct ggtcaaaggc ttctatccca gcgacatcgc 1020
cgtggagtgg gagagcaatg ggcagccgga gaacaactac aagaccacgc ctcccgtgct 1080
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gcaggggaaac gtcttctcat gctccgtgat gcatgaggct ctgcacaacc actacacgca 1200
gaagagcctc tcctgtctc cgggtaaatg agtgtagatc cgtaacggt taccaactac 1260

<210> 27
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 27
gtgtctctcc ctctgaccct tagg 24

<210> 28
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 28
cagttgcttt gtgtagctga gcag 24

<210> 29
<211> 1200
<212> DNA
<213> Artificial Sequence

<220>
<223> Plasmid pCDNcIL13oldFC

<400> 29
aaccgtcaga tcgcctggag acgccatcga attcgggtacc gccaccatgg cgctctgggt 60
gactgcagtc ctggctcttg ctggccttgg tggctctgcc gcccagggc cgggtgccacg 120

seqlist.txt

```

ttctgtgtct ctcctctga cccttaggga gctcattgag gagctgggtca acatcacaca 180
agaccagact cccctgtgca acggcagcat ggtatggagt gtggacctgg ccgctggcgg 240
gtactgtgca gccctggaat ccttgaccaa tatttccaat tgcaatgcca tcgagaagac 300
ccagaggatg ctgggaggac tctgtaaccg caaggccccc actacggtct ccagcctccc 360
cgataccaaa atcgagggtg cccagtttgt aaaggacctg ctcagctaca caaagcaact 420
gtttcgccac ggcccccttc tggaggtcct gttccaggga ccaggatccg agcccaaadc 480
ggccgacaaa actcacacat gccaccctg cccagcacct gaactcctgg ggggacctgc 540
agtcttcttc tttcccccaa aacccaagga caccctcatg atctcccga cccctgaggt 600
cacatgcgtg gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt 660
ggacggcgtg gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac 720
gtaccgtgtg gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta 780
caagtgcagg gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc 840
caaagggcag ccccgagaac cacaggtgta caccctgccc ccattcccgg aggagatgac 900
caagaaccag gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt 960
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```

<210> 30
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chimaeric Homo sapien IL-13

```

<400> 30
Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Arg Glu Leu
1      5      10      15
Ile Glu Glu Leu Val Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
20     25     30
Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Tyr Cys Ala
35     40     45
Ala Leu Glu Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Glu Lys
50     55     60
Thr Gln Arg Met Leu Gly Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr
65     70     75     80
Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
85     90     95
Asp Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
100    105    110

```

<210> 31
 <211> 72
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

```

<400> 31
tgtgatgttg accagctcct caatgagctc cctaagggtc agaggagag acacagatct 60
tggcaccggc cc                                     72

```

<210> 32
 <211> 73
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

```

<400> 32
aggagctggt caacatcaca caagaccaga ctcccctgtg caacggcagc atggtatgga 60
gtgtggacct ggc                                     73

```

seqlist.txt

```

<210> 33
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 33
gcaattggag atgttgggtca gggattccag ggctgcacag taccgcccag cggccaggtc 60
cacactccat ac 72

<210> 34
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 34
tgaccaacat ctccaattgc aatgccatcg agaagaccca gaggatgctg ggcggactct 60
gtaaccgcaa ggc 73

<210> 35
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 35
aaactgggcc acctcgattt tggatcggg gaggctggag accgtagtgg ggccttgcg 60
gttacagagt cc 72

<210> 36
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 36
aaatcgagggt ggcccagttt gtaaaggacc tgctcagcta cacaaagcaa ctgtttcgcc 60
acggcccctt c 71

<210> 37
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 37
cgcggattcg ggccggtgcc aagatctg 28

<210> 38
<211> 37
<212> DNA
<213> Artificial Sequence

<220> primerHomo sapien

<400> 38

```

seqlist.txt
ctccgctcga gtcgacttag aaggggccgt ggcgaaa 37

<210> 39
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 39
cgcgatccg ggccggtgcc aagatctg 28

<210> 40
<211> 16
<212> PRT
<213> Homo sapien IL-13

<400> 40
Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu Val Asn Ile Thr
1 5 10 15

<210> 41
<211> 10
<212> PRT
<213> Homo sapien IL-13

<400> 41
Met Tyr Cys Ala Ala Leu Glu Ser Leu Ile
1 5 10

<210> 42
<211> 9
<212> PRT
<213> Homo sapien IL-13

<400> 42
Lys Thr Gln Arg Met Leu Ser Gly Phe
1 5

<210> 43
<211> 17
<212> PRT
<213> Homo sapien IL-13

<400> 43
Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg
1 5 10 15
Glu

<210> 44
<211> 8
<212> PRT
<213> Homo sapien

<400> 44
Gly Pro Val Pro Pro Ser Thr Ala
1 5

<210> 45
<211> 24
<212> PRT

seqlist.txt

<213> Homo sapien

<400> 45

Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp
 1 5 10 15
 Ser Ile Asn Leu Thr Ala Gly Met
 20

<210> 46

<211> 7

<212> PRT

<213> Homo sapien

<400> 46

Ile Asn Val Ser Gly Cys Ser
 1 5

<210> 47

<211> 19

<212> PRT

<213> Homo sapien

<400> 47

Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu His Val
 1 5 10 15
 Arg Asp Thr

<210> 48

<211> 13

<212> PRT

<213> Homo sapien

<400> 48

Leu His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn
 1 5 10

<210> 49

<211> 14

<212> PRT

<213> Clostridium tetani

<400> 49

Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu
 1 5 10

<210> 50

<211> 21

<212> PRT

<213> Clostridium tetani

<400> 50

Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
 1 5 10 15
 Ala Ser His Leu Glu
 20

<210> 51

<211> 21

<212> PRT

<213> Plasmodium falciparum

seqlist.txt

<400> 51
 Asp Ile Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe
 1 5 10 15
 Asn Val Val Asn Ser
 20

<210> 52
 <211> 15
 <212> PRT
 <213> Paramyxoviridae Morbillivirus

<400> 52
 Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu Glu Gly Val
 1 5 10 15

<210> 53
 <211> 15
 <212> PRT
 <213> Hepatitis B virus

<400> 53
 Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu Asp
 1 5 10 15

<210> 54
 <211> 19
 <212> PRT
 <213> Corynebacterium diphtheriae

<400> 54
 Pro Val Phe Ala Gly Ala Asn Tyr Ala Ala Trp Ala Val Asn Val Ala
 1 5 10 15
 Gln Val Ile

<210> 55
 <211> 20
 <212> PRT
 <213> Corynebacterium diphtheriae

<400> 55
 Val His His Asn Thr Glu Glu Ile Val Ala Gln Ser Ile Ala Leu Ser
 1 5 10 15
 Ser Leu Met Val
 20

<210> 56
 <211> 20
 <212> PRT
 <213> Corynebacterium diphtheriae

<400> 56
 Gln Ser Ile Ala Leu Ser Ser Leu Met Val Ala Gln Ala Ile Pro Leu
 1 5 10 15
 Val Gly Glu Leu
 20

<210> 57
 <211> 20
 <212> PRT
 <213> Corynebacterium diphtheriae

seqlist.txt

<400> 57
Val Asp Ile Gly Phe Ala Ala Tyr Asn Phe Val Glu Ser Ile Ile Asn
1 5 10 15
Leu Phe Gln Val
20

<210> 58
<211> 20
<212> PRT
<213> Corynebacterium diphtheriae

<400> 58
Gln Gly Glu Ser Gly His Asp Ile Lys Ile Thr Ala Glu Asn Thr Pro
1 5 10 15
Leu Pro Ile Ala
20

<210> 59
<211> 20
<212> PRT
<213> Corynebacterium diphtheriae

<400> 59
Gly Val Leu Leu Pro Thr Ile Pro Gly Lys Leu Asp Val Asn Lys Ser
1 5 10 15
Lys Thr His Ile
20

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial immunostimulatory oligonucleotide

<400> 60
tccatgacgt tcctgacgtt 20

<210> 61
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial immunostimulatory oligonucleotide

<400> 61
tctcccagcg tgcgccat 18

<210> 62
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial immunostimulatory oligonucleotide

<400> 62
accgatgacg tcgccggtga cggcaccacg 30

<210> 63
<211> 24
<212> DNA
<213> Artificial Sequence

seqlist.txt

```

<220>
<223> Artificial immunostimulatory oligonucleotide

<400> 63
tcgtcgtttt gtcgttttgt cggt                24

<210> 64
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial immunostimulatory oligonucleotide

<400> 64
tccatgacgt tcctgatgct                20

<210> 65
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 65
caactgtttc gccacggccc cttcctggag gtcctgttcg gtggaccagg atccgagccc 60
aaatcggccg ac                                72

<210> 66
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 66
ctaggtagtt ggtaaccggt aacgg                25

<210> 67
<211> 6
<212> PRT
<213> Homo Sapien IL-13

<400> 67
Glu Leu Ile Glu Glu Leu
1                      5

<210> 68
<211> 4
<212> PRT
<213> Homo Sapien IL-13

<400> 68
Asn Ile Thr Gln
1

<210> 69
<211> 5
<212> PRT
<213> Homo Sapien IL-13

<400> 69
Ser Met Val Trp Ser

```

seqlist.txt

1

5

<210> 70

<211> 7

<212> PRT

<213> Homo Sapien IL-13

<400> 70

Asp Thr Lys Ile Glu Val Ala

1

5